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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,163	12/22/1999	DAVID M. PUTZOLU	81674-264193	5845

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EXAMINER

NGUYEN, QUANG N

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/470,163

Applicant(s)

PUTZOLU ET AL.

Examiner

Quang N. Nguyen

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Detailed Action

1. This Office Action is in response to the Amendment filed on 09/03/2004. Claims 1-6, 8, 11-15 and 17-20 have been amended. Claims 1-21 remain for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. **Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

4. Claim 1 recites the limitation "the instructions" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. (US 6,434,618), herein after referred as Cohen, and in view of Ramaswamy et al. (US 6,424,621), herein after referred as Ramaswamy.**

7. As to claim 1, Cohen teaches a computer system comprising:

a forwarding element to perform data forwarding in a computer network, the forwarding element configurable with a device-specific instruction set (*i.e., a programmable network element 400 such as a router/gateway to perform data routing/forwarding is configurable with programs, codes, scripts, a set of rules or instructions specific to that router/gateway provided by one or more of the dynamically loaded and invoked programs*) (Cohen, Figs. 1-4 and C2: L5-36);

an interconnecting element (*i.e., a network interface*) operatively connecting the forwarding element to the control element; and

However, Cohen does not explicitly teach a control element to perform network signaling and control in the computer network, the control element outputting non-

device-specific instructions to configure the forwarding element and a forwarding/control element plugin integrated with the control element to receive and translate the non-device-specific instructions into the device-specific instruction set in order to configure the forwarding element.

In the related art, Ramaswamy teaches a computer system comprising a control element to perform network signaling and control in the computer network (*i.e., the control processor 42 performs complex calculations on the raw system load information and defines an optimum traffic load distribution*), the control element outputting non-device-specific instructions to configure the forwarding element (*the traffic load distribution result is then written into the shared memory space for use by the switching processor to forward data packets, i.e., to configure the forwarding element*). Ramaswamy also teaches the control processor 42 further includes several software modules to handle discrete control tasks, including a resource manager 52 and a master module 54, wherein the master module 54 receives the raw load data (*i.e., the forwarding element plugin integrated with the control element receiving non-device-specific instructions*) and synthesizes the data into a desired load distribution in accordance with a predetermined distribution algorithm such as the distribution algorithm may favor distribution of incoming packets so that all servers have an even load, or alternately, may favor distribution of incoming packets to a certain server having unique applications or processing capability (*i.e., translating into the device-specific instruction set to configure the forwarding element*) (Ramaswamy, Figs. 4 and 7, C3: L9-50, C6:L25 - C7:L24, and C10: L20-36).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Cohen and Ramaswamy to include a control element to perform network signaling and control in the computer network, the control element outputting non-device-specific instructions to configure the forwarding element since such methods/techniques were conventionally employed in the art to allow the system to transfer data packets between computer networks in which a software interface is defined between the switching module and the control module (*or the operating system*) to process the packet for transferring/routing the data packet to its intended destination.

8. As to claim 2, Cohen-Ramaswamy teaches the computer system as in claim 1, further including an opaque forwarding element plugin (*i.e., the dispatcher process 402 of the programmable gateway 400*) for receiving the standardized data set from the control element and transmitting the standardized data set to the forwarding element plugin, and for receiving the specialized data set from the forwarding element plugin and transmitting the specialized data set to the forwarding element (Cohen, Fig. 4 and respective portions of the specification, C4: L14-38, C5: L40-67 and C6: L1-27).

9. As to claim 3, Cohen-Ramaswamy teaches the computer system as in claim 1, but does not explicitly teach the specialized data set is a binary large object. However, as generally known in the art, a Binary Large Object (BLOB) is a variable-length data type that is commonly used to store complex data, such as graphics images, video data,

audio data, and other non-textual data. Therefore, Cohen-Ramaswamy inherently teaches the specialized data set is a binary large object (Cohen, C3: L30-67 and C4: L1-6).

10. As to claim 6, Cohen-Ramaswamy teaches the computer system as in claim 1, wherein the specialized data set is encrypted before transmission to the forwarding element, and the encrypted specialized data set is decrypted at the forwarding element (Cohen, C3: L49-52 and C4: L57-62).

11. As to claim 7, Cohen-Ramaswamy teaches the computer system as in claim 1, wherein the forwarding element plugin is a dynamic link library (Cohen, C6: L28-50).

12. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen, in view of Ramaswamy, and further in view of Beighe et al. (US 5,742,607), herein after referred as Beighe.

13. As to claims 4-5, Cohen-Ramaswamy teaches the computer system as in claim 1, but does not explicitly teach the forwarding element further includes a decapsulator that receives the device-specific instructions and decapsulates them into data readable by a device-specific forwarding element interface of the forwarding element to configure the forwarding element.

In a related art, Beighe teaches a computer system comprising a central processor, a forward channel interface, a return channel interface, and a main memory, each being coupled to a bus, wherein the forwarding element further includes a decapsulator that receives the device-specific instructions and decapsulates them into data readable by a device-specific forwarding element interface of the forwarding element to configure the forwarding element (Beighe, C2: L24-48 and C8: L10-30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Cohen-Ramaswamy and Beighe to include a decapsulator that receives the specialized data set and decapsulates the specialized data set into data readable by a device-specific forwarding element interface of the forwarding element to configure the forwarding element since such methods/techniques were conventionally employed in packet manipulation to control two way communication in network management system.

14. Claims 8-16 are corresponding method claims of claims 1-7; therefore, they are rejected under the same rationale.

15. Claims 17-21 are corresponding article claims of claims 1-7; therefore, they are rejected under the same rationale.

Response to Arguments

16. In the remarks, applicant argued in substance that

(A) Prior Arts do not teach or imply “the control element outputs non-device-specific instructions to configure the forwarding element”, as claimed in claims 1, 8 and 17.

As to point (A), **Ramaswamy** teaches a computer system comprising a control element to perform network signaling and control in the computer network (*i.e., comprising a control processor 42 performs complex calculations on the raw system load information and defines an optimum traffic load distribution*), the control element outputting non-device-specific instructions to configure the forwarding element (*the traffic load distribution result is then written into the shared memory space for use by the switching processor 44 to forward data packets, i.e., to configure the forwarding element*) (**Ramaswamy**, Figs. 4 and 7, C3: L9-50, C6:L25 - C7:L24, and C10: L20-36).

(B) Prior Arts do not teach or imply “a forwarding element to perform data forwarding in a computer network, configurable with a device-specific instruction set”, as claimed in claims 1, 8 and 17.

As to point (B), Cohen teaches a programmable network element 400 such as a router/gateway to perform data routing/forwarding is configurable with programs, codes, scripts, a set of rules or instructions specific to that router/gateway provided by one or more of the dynamically loaded and invoked programs (*i.e., the forwarding element configurable with a device-specific instruction set*) (Cohen, Figs. 1-4 and C2: L5-36);

(C) Prior Arts do not teach “the forwarding element plugin that translates the non-device-specific instructions of the control element to the device-specific instructions of the forwarding element”, as claimed in claims 1, 8 and 17.

As to point (C), **Ramaswamy** teaches the control processor 42 further includes several software modules to handle discrete control tasks, including a resource manager 52 and a master module 54, wherein the master module 54 receives the raw data (*i.e., the forwarding plugin integrated with the control element receiving non-device-specific instructions*) and synthesizes the data into a desired load distribution in accordance with a predetermined distribution algorithm such as the distribution algorithm may favor distribution of incoming packets so that all servers have an even load, or alternately, may favor distribution of incoming packets to a certain server having unique applications or processing capability (*i.e., translating into the device-specific instruction set to configure the forwarding element*) (**Ramaswamy**, Figs. 4 and 7, C3: L9-50, C6:L25 - C7:L24, and C10: L20-36).

17. Applicant's arguments as well as request for reconsideration filed on 09/03/2004 have been fully considered but they are not deemed to be persuasive.

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RUPAL DHARIA
PATENT EXAMINER